THE AMERICAN ARCHITECT AND BUILDING NEWS.

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BOSTON, NOVEMBER 4, 1876.

CONTENTS.

SUMMARY 353
THE FRENCH ARCHITECTURAL CONGRESS 354
DECORATIVE FINE-ART WORK AT PHILADELPHIA. I. 356
THE ILLUSTRATIONS: —
Buildings for the Exposition of 1878 357
THE SANITARY CONDITION OF COUNTRY HOUSES. II. 357
THE THEORY OF COLOR 358
THE AMERICAN INSTITUTE OF ARCHITECTS 358
COMMUNICATION: —
Building in Hartford 359
THE LATEST PERIODICALS 359
NOTES AND CLIPPINGS 359

THERE is great encouragement for lovers of art in the recent amendment to the by-laws of the New York Park Department, which orders that henceforth before any statue is accepted for the Central Park it must be submitted, either finished, or as a finished model, to the judgment of the Presidents of the American Academy of Design, the American Museum of Art, and the American Institute of Architecture. Moreover, the positions of statues are not to be determined till they are actually received; and they are not to be so placed as to overpower a landscape or divide a view. Ideal statues, or works of pure embellishment, are to be allowed here and there about all the grounds; but portrait and commemorative statues are restricted to certain more public parts of the ground, — the neighborhood of the gates, the borders of the chief mall, or to the approaches of the Museums of Art and of Natural History, whenever the trustees of these museums express a desire for their company. Such statues must henceforth be of bronze, and of what is called heroic size, that is, say, from a third to a half greater than life; and colossal statues are to be no more allowed, nor is anybody to be admitted into this pantheon till five years after his death.

THERE are many reasons why these restrictions are admirable. A few years ago, when statues were rarities in the United States, our people were as glad of them as schoolboys of apples, with little regard to their quality. The desire for them speedily begot a brood of sculptors, who in their turn stimulated the demand, and that the supply; till now the difficulty is to secure a proper selection both of subjects and objects. The five years' rule will be useful in guarding the choice of subjects, and ruling out many favorites of the hour who might otherwise be urged into an objectionable prominence. People who "donate" statues or monuments commonly think only of their donations, and are very careless of general effect. Hence the wisdom of a provision which, while it restricts statues to dimensions suitable for public grounds, forbids bringing obscure or questionable names into undue prominence by the size of the statues that honor them. It is a reasonable limitation, too, which reserves the effigies of those who have adorned the walks of public life for the adornment of the walks of public pleasure; and keeps the more secluded grounds for purely artistic creations. The establishment of the jury of experts to try the sculpture is also an excellent thing. We would that such guardianship could be generally extended to public grounds and places. It would be a wholesome check upon those who are disposed to parade their admiration of inferior or disreputable men, and a safeguard to domains which are exposed to the incursions of objectionable statuary. How much annoyance and unseemly mirth would have been spared, if due precaution had been taken in season to defend the avenues to the Capitol against the attacks of the Clarks and Vinnie Reams!

A RATHER curious case in building-law has just come up in Philadelphia. Mr. Charles A. Carman, carpenter and builder, offered in public competition a bid of $15,300 for building a public schoolhouse. It is provided by statute that the city work shall be given in contract to the lowest responsible bidder; but in this case the contract was awarded to one Mr. Columbus Tweed, whose bid was $15,849. Mr. Carman therefore filed a bill in equity against Mayor Stokely, the president of the Common Council, the president of the Board of Public Education, and Mr. Tweed, asking for an injunction against giving the contract to Mr. Tweed, and praying that it should be awarded to himself. The injunction has been granted. We know nothing of Mr. Carman or Mr. Tweed, or of the merits of the present case; but it is a good illustration of some difficulties of the contract system. The rule of giving contracts for public work to the lowest responsible bidder is intended to protect the governments, general or local, by getting their work done as economically as possible, and to guard against favoritism or bribing in awarding work. In practice, it is apt to prove a stumbling-block to both honest and dishonest officials, and one perhaps as easily surmounted by the dishonest as by the honest. Under it, every citizen who can furnish the requisite pecuniary guaranty claims the right to offer a bid; and it is impossible to weed out the swindlers from the men of honest intent.

THE theory is, of course, that the government will by careful supervision defend itself from imposture, and insure that its contracts shall be well and truly carried out; but this is difficult. A bidder who wants a contract to "skin" cannot be kept out; and he is likely to bid lower than those who mean to do faithfully. If the contract falls to him he has two resources for making money out of it. The first and most direct is by slighting his work, and cheapening his material. It may be, in most cases, possible to prevent this; but it requires great shrewdness, experience, energy, and incessant care. It is sometimes prevented, and perhaps as often not prevented. If the swindling contractor finds that he is not allowed to slight and cheapen, but is compelled to fulfil his contract to the letter, he has his second expedient. He memorializes Congress, or the State Legislature, or the City Government, for relief, stating that his work has cost much more than he had reason to expect, that he is ruinously out of pocket by it, and trusts to legislative compassion to recoup him. Through the indulgence of a legislature which sees that the work has really been well done, and infers that the doer is honest, or by the help of a lobby or a ring, he is very apt to succeed. Meanwhile the honest bidder has lost his chance of employment, the government pays in the end more for its work than if it had employed him, and the "shyster" is encouraged. This is the argument urged by the late Supervising Architect, Mr. Mullett, against letting out the government buildings to contractors. It does not cover the whole ground, and there are many difficulties on the other side; but this side deserves attention.

SOME months ago we had to note that an academy of art had been established in Japan, and that three professors of art had been imported thither from Italy; and we lamented the fatuity of the Japanese in putting themselves under the tuition of representatives of a nation who were in many respects their artistic inferiors. In contrast to this, we read in the Philadelphia *Press*, that Dr. Christopher Dresser of London, whom the *Press* rather rashly styles the first designer in England, is now on his way to Japan in behalf of some of the English manufacturers, to get specimens of Japanese decorative work for their use and imitation. Eng-

land has taken many a lesson from Japan, as her stuffs and hangings will show; and she has thus far confined her missionary efforts there to commercial matters. As for the artistic missionaries that the Japanese have imported, it would not be distressing to learn that they had risen to expel them again, as many heathens have from time to time their spiritual ones. Dr. Dresser has stopped at Philadelphia to give three lectures in the new Academy of the Fine Arts, for the benefit of the School of Industrial Art; and it is intimated that he will concern himself with collecting material for the museum to which the school is to be attached, of which we have more than once spoken.

THE *Architect*, under caption of "A Cape Town Muddle," tells of the adventures of the Cape Colony in search of a Parliament House, which are not as unique as we wish they were; but which show very well how easily the eagerness of a building-committee to get a quart into a pint-pot, and of an architect to take advantage of that eagerness, may overreach themselves. Three years ago the government of the Colony advertised a competition for designs for a Parliament House, fixing the limit of cost at thirty-five thousand pounds. It proved, as is too often the case, that the sum was altogether inadequate to the requirements, and the designs submitted could not be carried out for any thing near it. But one Mr. Freeman offered a design which he said could be executed for fifty thousand pounds, which apparently came nearest the limit fixed; and on this ground he persuaded the building-committee to accept it. They appointed him their resident architect, having first taken the precaution to check his estimate by one proposed in the Office of Public Works, which agreed substantially with his own. It came out presently, however, that the price of building being materially higher at the Cape than in England, Mr. Freeman had based his estimate on the prices of the English market; that he had made no allowance for porticos, steps, terraces, or foundations; that he had assumed that a certain part of the interior should be left unfinished; and that, being in the employ of the Office of Public Works, he had himself furnished the data for its corroborative estimate. Nevertheless he was allowed to commence work, and put in his foundations pending the preparation of complete drawings and specifications. When these were finished the estimate upon them amounted to one hundred and fourteen thousand pounds. A new and energetic Commissioner of Public Works having been appointed, Mr. Freeman was brought to book. Then it appeared that the foundations which had been laid were as unsound and worthless as the estimates, being penetrable at all points by a walking-stick, and at many by the arm of the inspector. Mr. Freeman was of course discharged, despite his appeals and protestations, and the Colony is relieved of its architect; but it has spent a considerable sum of money and three years of waiting, and its Parliament House is nowhere.

ALL travellers who have visited Ravenna remember the baptistery of the cathedral, and its mosaics, which are among the most interesting of the very unequal mosaics of Ravenna, the earliest and perhaps the very noblest of them all. They will recall with sorrow the dilapidations that these mosaics have suffered, owing to the bad condition of the building which, like many others in the marshy soil of Ravenna, has sunk till the original floor, now covered with three yards of earth, is below the level of low tide, and some eleven feet below the ground outside. Within two or three or four years some effort has been made to restore the mosaics, but without trying to cure the subsidence of the building. Now, however, Signor Lanciani, chief of the Government staff of civil engineers, has obtained from the Italian government authority to raise the whole baptistery till it stands as high above the ground as before it sunk. His means are the usual ones, — a series of jack-screws to be turned in concert in the way we are familiar with in raising buildings; the walls meanwhile being steadied, and the mosaics held in place, by a wooden framework with a padding against the mosaics. The lower parts of the walls, however, which have been for ages below the level of the water in the ground, are found to be so much damaged that it is not thought safe to raise the building from the bottom: the walls, therefore, will be cut away from the foundation, and the interval built in after the superstructure is raised. The lower part of the walls being entirely bare, nothing of moment will be sacrificed by this. The old floor has disappeared; but its level is marked by two bases of the original eight columns in the internal angles of the walls, which have been found *in situ* below the ground. The shorter columns which now occupy the angles, and are a later substitution, will be removed. Two granite columns found in a courtyard near at hand, whose height suits the old indications, have been accepted as originals to be replaced here, and as models for the restoration of the others. At the same time measures have been taken to protect the *Rotunda*, or tomb of Theodoric, the one purely stone building of old Ravenna, whose monolithic dome nearly forty feet across is a wonder to this day. It too has sunk, and stands in a pool of water, the ground having been hollowed out around it. Signor Lanciani has levelled the sunken area in which the tomb stands, covered it with a water-tight pavement, and walled it in to keep it dry. It is curious that these buildings at Ravenna, which have sunk ten feet or more below the present ground-level, are not wrenched or cracked, or noticeably out of the vertical, which must almost necessarily have occurred if the foundations had sunk into the ground, as happened at Pisa, Bologna, and Venice; from which it appears clear that they have subsided bodily with the gradual compacting of the alluvial ground, over which new material has accumulated in the centuries.

THE FRENCH ARCHITECTURAL CONGRESS.

WE have waited till the latest numbers of the *Revue Générale de l'Architecture* for a detailed account of the Congress of French Architects, held at Paris last June under the auspices of the *Société Centrale des Architectes*. The *Revue* notices the fact that the Congresses of successive years have brought out a steadily increasing attendance of architects from the provincial towns, while the interest of the Parisian architects has diminished. Some thirty of the provincial architects attended the Congress; but it was noticeable that the whole number, which at the first session was ninety, fell off in the succeeding sessions to about one-half. This indifference the *Revue* ascribes, in a good measure, to the absence of discussions which, it says, have been rather discouraged than favored by the managers of the Congress, apparently with the feeling that animated discussion disturbs the sobriety and dignity of the proceedings, — a dignity which, it suggests, tends to "abate the zeal of the best disposed assembly, and prompts the members to seize their hats to return no more." "Discussion," it adds, "is the very principle of life in an assembly; and the promoters of the Congresses should let this truth sink into them if they would not seriously compromise the future of these national conferences." These suggestions are not without value for those who have to lay out the work for the conventions of the American Institute, and are confirmed more or less by its experience. Fortunately the Institute, having apparently a closer affiliation of its Chapters than the *Société Centrale*, has a variety of administrative work to do, and is invited, and indeed compelled, to a good deal of discussion, — often quite animated discussions, as when, in the last convention, no less than fifty-seven speeches or remarks, shorter or longer, are shown by the secretary's minutes to have been made on one resolution. These discussions bring the members into direct

relations with their fellows, and, by the time the more formal papers or discourses are presented, have awaked a community of interest and a freedom of intercourse which prevents the subsequent proceedings from lapsing into sterility. The business of the French Congress, on the contrary, was laid out exclusively in a series of formal discourses, received and passed over, for the most part, without expression of opinion from the company, which assumed the *rôle* of a simple audience. Some blame is attached to the place of meeting, the great hall or *Hémicycle* of the *École des Beaux-Arts*, which was not only unduly large for the number assembled, but acoustically bad. The effect of empty benches and imperfect hearing on any assembly is certainly damping.

So it came to pass that even the exciting question of competitions, which had been the subject of long debate and much conference between the central and provincial societies at the first Congress in 1873, was brought forward the first day, and the paper on the subject passed over without any expression of opinion. The author of the paper, M. Le Cœur, of Pau, argued strongly in favor of what may be called double competitions, in which the competitors submit at first only slight and general sketches, by means of which a small number are selected to prepare their designs in full for the second and decisive competition. The Congress of 1873 had, at the end of its deliberation, expressed itself decidedly against this form of competition; after laying down the principle that, whenever drawings had been submitted in competition, they should be exhibited, on the ground that the participants in the second competition, having seen the sketches submitted in the first, would be sure to borrow ideas from the others for working up their own. On this point the *Revue* discreetly remarks that the only thing that it is possible to appropriate from a slight sketch of a design is its leading idea, an appropriation which is too flagrant to escape notice. Such a double competition has the signal advantage of saving much unnecessary work to the mass of competitors, who are thrown out on the first comparison of sketches, and whose work is unremunerated.

Another topic of general professional interest touched upon in two of the papers presented at a subsequent session, by MM. Lehmann and Duvert, was the organization of building-workmen. Both speakers deplored the abolition of the old division of the workmen of each trade into classes, and the present equalization of wages, which discourage improvement in skill by depriving it of all special reward, and tend to keep the general standard of work down to the level of the poorest workman. These are serious evils, to which we have more than once had occasion to refer, and which have given much solicitude to everybody who is concerned with the mechanical trades — except the workmen themselves. Prof. Kerr, in a letter to the *Architect* not long ago, urged a recurrence to the organization of the mediæval guilds. The re-establishment of the system of apprenticeship has been pressed in many quarters; and certainly, in some form or other, it would seem to be imperatively necessary. But both these expedients demand the co-operation, perhaps the initiative, of the workman himself; and he is at present altogether in favor of the existing condition and tendencies. Some years ago the *Société Centrale* undertook, under the urgent persuasion of its late president, M. Victor Baltard, M. Viollet-le-Duc, and others, of whom M. Lehmann was one, we believe, to establish evening schools for workmen engaged on buildings, to instruct them in geometry, drawing, and other studies bearing directly on their work, — schools which bade fair to be of great efficiency and use if funds had been found to support them properly. M. Lehmann pressed the importance of organizing schools of apprenticeship, or technical schools, with workshops, where pupils should be instructed in their trades, which should be under the general direction of the *Société Centrale*, and which several of the trade-syndicates had already shown a disposition to encourage and support. M. Duvert urged the formation of guilds (*corporations libres*), and proposed the appointment of a committee to forward the matter. After some discussion whether the appointment of a committee should be made by the meeting, or whether it should be left to the *Société Centrale* itself, a vote was passed that the paper of M. Lehmann, and an abstract of that of M. Duvert, should be printed and distributed among all the provincial societies, and all the members of the Congress of this year, and that they should be invited to offer suggestions on the subject to the Paris Society, which should appoint a committee to prepare for the Congress of 1877, in the light of these suggestions, a report upon the subject.

M. Leguay read a monograph on slate, tracing its use from the necklaces of the early Gauls to its employ as a building-material in the middle ages, and its first adoption as a roof-covering in the fourteenth century, when it was still too costly for any but magnificent buildings. He added an account of the experiments of Jollivet, in which it was found possible, by firing, to give a red color to ordinary slate; and the process of Magnus, by which it was covered with coatings of colored enamels, fused upon it at a temperature of 250° to 300° C. (say, 450° to 550° Fah.).

A paper was contributed by M. Achille Lucas on the History of Building-Law. The valuable *Manuel des Lois du Bâtiment*, published by the society in 1863, has long been out of print; and in 1873 a committee was appointed, of which M. Lucas is president, to prepare a new edition. The paper contributed to this Congress was the preface of the forthcoming second edition, which is announced to appear at the end of the current year. At another session, M. Charles Lucas gave some account of the societies of architects and engineers of Vienna and of Hungary. The habit of forming associations of architects and engineers together is common in Eastern Europe. Not only is the great society of the German Empire so constituted, but those of Hamburg, Breslau, Saxony, and other German cities and states, as well as those first named. Ultimately, the speaker thought, this system must prevail in France. The Hungarian society, one of the youngest, founded in 1867, had met with remarkable success, having already a membership of more than twelve hundred, and maintaining a special publication (periodical, we presume). The closing address was by M. Rayet, lecturer at the *École des Hautes Études*, on Ionic architecture in Ionia. M. Rayet has lately been occupied with M. Thomas, one of the travelling scholars of the French Academy at Rome, in investigations of some of the Ionic remains in Asia Minor, especially of the temple at Priene and that of Apollo at Didyme, which have been carried on at the expense of the Rothschilds. The fragments of these temples, which have been exhumed and brought to Paris by these gentlemen to be presented to the French Government by Messrs. Rothschild, had been displayed at the Louvre, where they were visited by the Congress.

The attraction of the last day's session was the distribution of medals and "mentions," decreed by the *Société Centrale* to architects and mechanics, in accordance with a plan proposed at the first Congress in 1873, but not fully matured, we believe, till last year. The three medals for private architecture were awarded to MM. Paul Sédille and Th. Belle of Paris, and Duphot of Bordeaux. Mentions were awarded to M. A. Lucas of Paris for his work on Building-Law, and to M. Georges of Lyons for archæological studies. Students' medals were given to MM. Ernest Cléret of the *École des Beaux-Arts*, *atelier* of M. André, and Henry Danger of the School of Drawing and Mathematics. Diplomas were given to one stone-cutter and one mason; and according to a system by which, each year, some one of the building-trades is selected for special recognition, ironwork having been selected for notice this year, diplomas were awarded to M. Boulanger, the manufacturer of the great hinges on

the new doors of the cathedral of Notre-Dame at Paris; M. Moreau, for the wrought-gates of the choir of the cathedral at Verdun; and M. Larchevêque, for those at Bourges. Three workmen's diplomas and two "mentions" were given to men in the service of M. Moreau.

The Congress visited by invitation the new hospital, the *galerie dorée* of the Bank of France, the Palace of Fontainebleau, and the *Tribunal de Commerce*. The subjects assigned for discussion at the Congress of 1877 are the condition of the building-trades, commemorative monuments, architectural societies, architect's fees, terra-cotta, and the report of the *Salon* of 1877 (the annual exhibition of art in the *Palais de l'Industrie*.)

DECORATIVE FINE-ART WORK AT PHILADELPHIA.

FURNITURE. — I.

THE Exhibition is rich in illustrations of the present condition of the arts allied to architecture, and to some extent practised by architects throughout the world; though there is very little whose designing can be ascribed to known persons, and especially to architects. Most of this kind of work is in the British and American courts. The works are all put forth by their makers, who assume all the responsibilities of design and execution. Here we have the works of trained art-students who design only, of art-workmen who design and work, and of those born art-workmen to whom all knowledge is a tradition handed down by their forefathers, — all in direct comparison. The opportunities for study, afforded by the Exhibition, seem almost boundless. Never before has such a treat been afforded to the art student and connoisseur; and it would not be safe to predict that America will again see its like in a lifetime. Hereafter we must depend upon the rapidly growing art-museums, which are happily springing into existence in many places, for the *pabulum* so greatly needed in this country to support healthy art-industries. It is therefore with gratitude that we see so many articles marked as having been "purchased by the Pennsylvania Museum of Industrial Art." This organization is to have control of the art collections of Memorial Hall, when it is used as originally intended. From the great extent of the purchases and gifts to the museum, we judge that the Exhibition alone will contribute nearly enough to fill the building. The purchases have been made with discretion, and include works from all the nations here represented, in bronze, pottery, furniture, glass, and metal-work. Philadelphia, no less than the whole country, is to be congratulated upon this magnificent foundation.

It would be impossible, within the limitations of these pages, to give any adequate review of the condition of decorative art in all its departments. The art element, to a greater or less degree, permeates all branches of manufacture, and varies according as nations possess, on the one hand, art instincts, and on the other hand, art culture. The former is characteristic of the Eastern races, especially Russia, Turkey, Egypt, India, China, and Japan; the latter is seen especially in England and America. France, where fashion rules all except the graphic arts, has neither, and at most can be credited with little beyond an expression of "good taste."

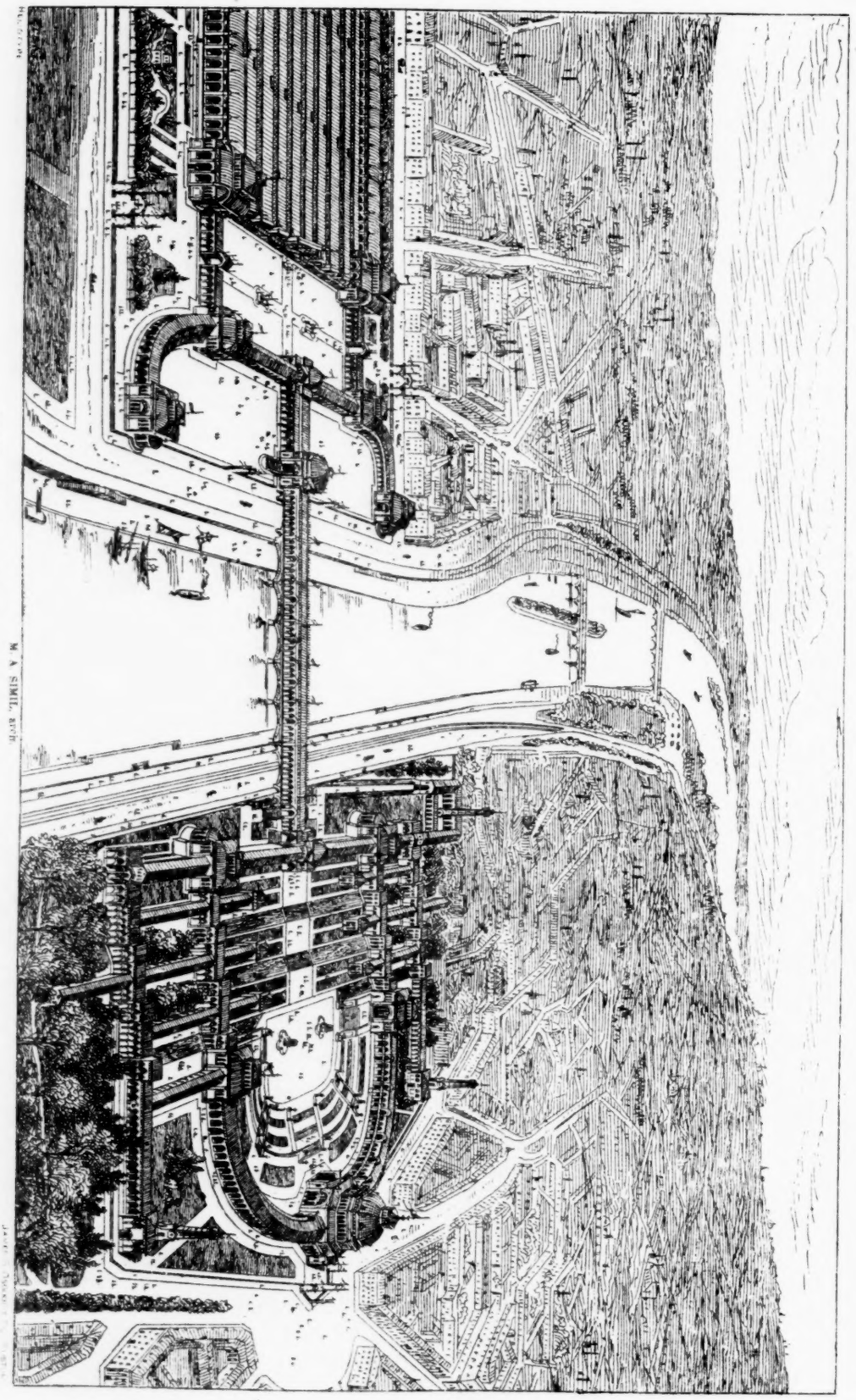
The arts which are of immediate interest in connection with architecture are furniture, metal-work, pottery, stuff-goods, painting, and wall-paper goods. The first, in many cases, combines them all. What pertains to the finishing and furnishing of a house stands first in importance. Wood-working is the basis of all of it. In this department, all the countries contributing to the Exhibition are well represented, with the exception of France. The showcases of the French court are the only examples of woodwork to be seen; and these are not especially noticeable, but display that good taste in the adaptation of a means to an end to which allusion has been made above. They are plain, unobtrusive, and almost uniformly black, relieved slightly with gold; to which stand in glaring contrast the exhibition-cases of the United States department, so overpowering their contents as to appear like a competitive exhibition of showcases and miniature buildings. This shows simply a want of judgment on the part of American exhibitors, and an exuberance of fancy among those who have designed their structure. Here we see the handwriting of some of our leading architects in Boston, New York, Philadelphia, Cincinnati, and Chicago, and some of the best work of furniture-decorators. One of these especially, the showcase of the Whiting Paper Company, which we take to be the work of Herter Bros. of New York, is one of the most superb pieces of art furniture in the Exhibition, both in design and execution. Designed in a free and constructive Jacobean style, it is light, graceful, and appropriate, far surpassing any thing of the kind in the French court, though treated in the same manner. It is all of ebonized cherry. The only color introduced is in some panels, which are completely filled with foliated designs, executed with inlays of ebony, satinwood, and mahogany.

France has modest signs to show the entrances to her courts; and the rest of her enclosure is made by the almost uniform black cases of her exhibitors. No grander portal could be conceived than the entrance to the Belgian court, which is one of her exhibits, composed of two immense plates of glass from the St. Gobain works, with an open portal between; the whole set off with a heavy framework covered with maroon velvet.

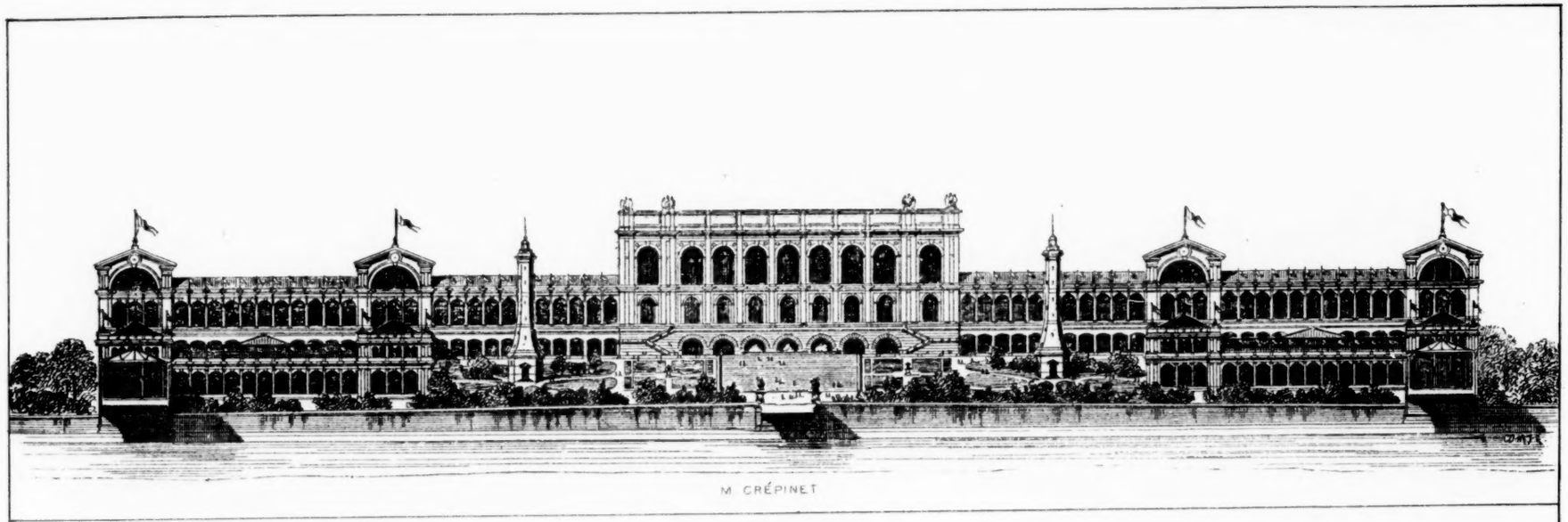
England, Germany, and Austria, with rare good sense, do not enclose their courts. Egypt has a clumsy wooden imitation of the front of an ancient temple. Norway encloses her space with a specimen of her mill work, in unpainted Norway pine, thereby indicating one of her chief industries, — the furnishing of dressed lumber for building. It is in the style which is native, and to the manner born, in such countries as Norway, Sweden, and Switzerland, all wood-building countries. The Japanese enclosure is the best of all, and, like all things Japanese, is unique and original. Between all the columns in the space occupied, and running along the lattice trusses, are suspended hangings of white Japanese crape, with bold patterns in dark blue, representing chrysanthemums and pinks, so that the court and its boundaries can be recognized from any point of view. The offices of the commission are formed of turned poles, resembling bamboo, with framed cross-pieces and stuff-goods stretched on the inside, forming a complete enclosure. Unfortunately the commission was obliged to have most of its glass cases made in this country.

Entering the Main Building from the west, the visitor finds himself between two courts which afford a striking contrast. On the left is old Italy, on the right the ancient though fresh and vigorous Japan. Well may any one wonder and regret that Japan should have sent to this same Italy for three teachers to instruct her in the ways of European art. This is, however, but one step in that "civilizing" process which will before long deprive us of all that is good in Japanese art. The Italian court is a vast trinket-shop, which swarms with buyers and sellers, and contains little of interest save the pottery, which shows how Italy is trying in a feeble way to revive her lost glories, and a display of furniture by several exhibitors. This latter is notable for little more than elaboration of carving, the general designs being feeble and uninteresting. The halo which surrounds the history of Italian art is a beacon which will always draw a crowd of gazers; and it is pitiful to see the throngs wandering among these heaps of gewgaws and trash, seeking for the beautiful in vain. The only furniture in this court, worthy of comment, is that from Luigi Frullini of Florence. It is spread about in a confused way, showing neither taste nor skill in arrangement. The best piece is a black walnut mantel, which, though without any beauty of design, displays some carved work giving evidences of refined feeling and skilful workmanship. The bird-carving is especially beautiful. Luigi Ottajano, of Naples, exhibits a piece which is characteristic of the tendencies of modern Italian art. It is a mirror-frame about twelve feet high, with a basin-like receptacle in front, probably intended for a hall stand. The whole represents a model of a structure in ruins. It is a curiosity and nothing more. The amount of work on it is bewildering to the senses. If this ruined structure ever existed, it must have been of the late Renaissance. To make it doubly painful, it represents a part of a building whose walls are of stuccoed brickwork. This is to enable the carver to show his skill in carving the bricks, which are exposed in many places, thus impressing us more forcibly with the idea that it represents ruins, a fact which the carver is determined that we shall not lose sight of. Judging by the sizes of the bricks, this interesting ruin must be one hundred and fifty feet high, and the door or window which it contains is about one hundred feet high. The public are informed that it can be bought for twenty-five hundred dollars, which tells the whole story.

In the Norwegian court the only furniture exhibit is a set of heavy carved bedroom furniture, by William Gram of Christiana. It is a curiosity in its way, and as such has been illustrated and fully described in the *Art Journal*. As a practical set of furniture for use, it is of no account whatsoever. As an example of native art in a style which has no parallel in any other country,



BUILDINGS FOR THE EXPOSITION OF 1878.



M. CRÉPINET

MM. DAVIOUD et BOURDAIS arch

HELIOTYPE

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BUILDINGS FOR THE EXPOSITION OF 1878.

FACADE OF BUILDING ON THE TROCADÉRO.

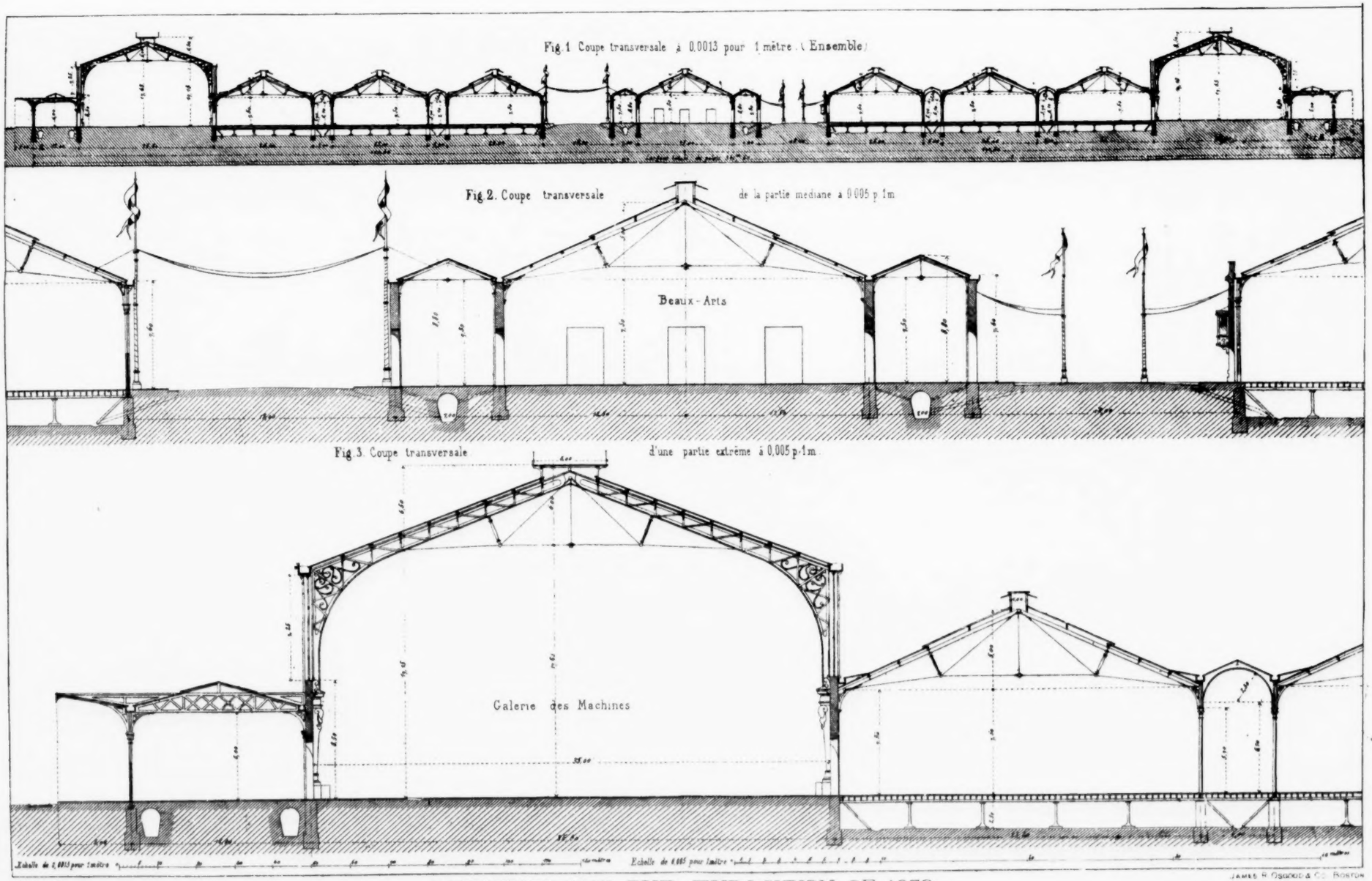
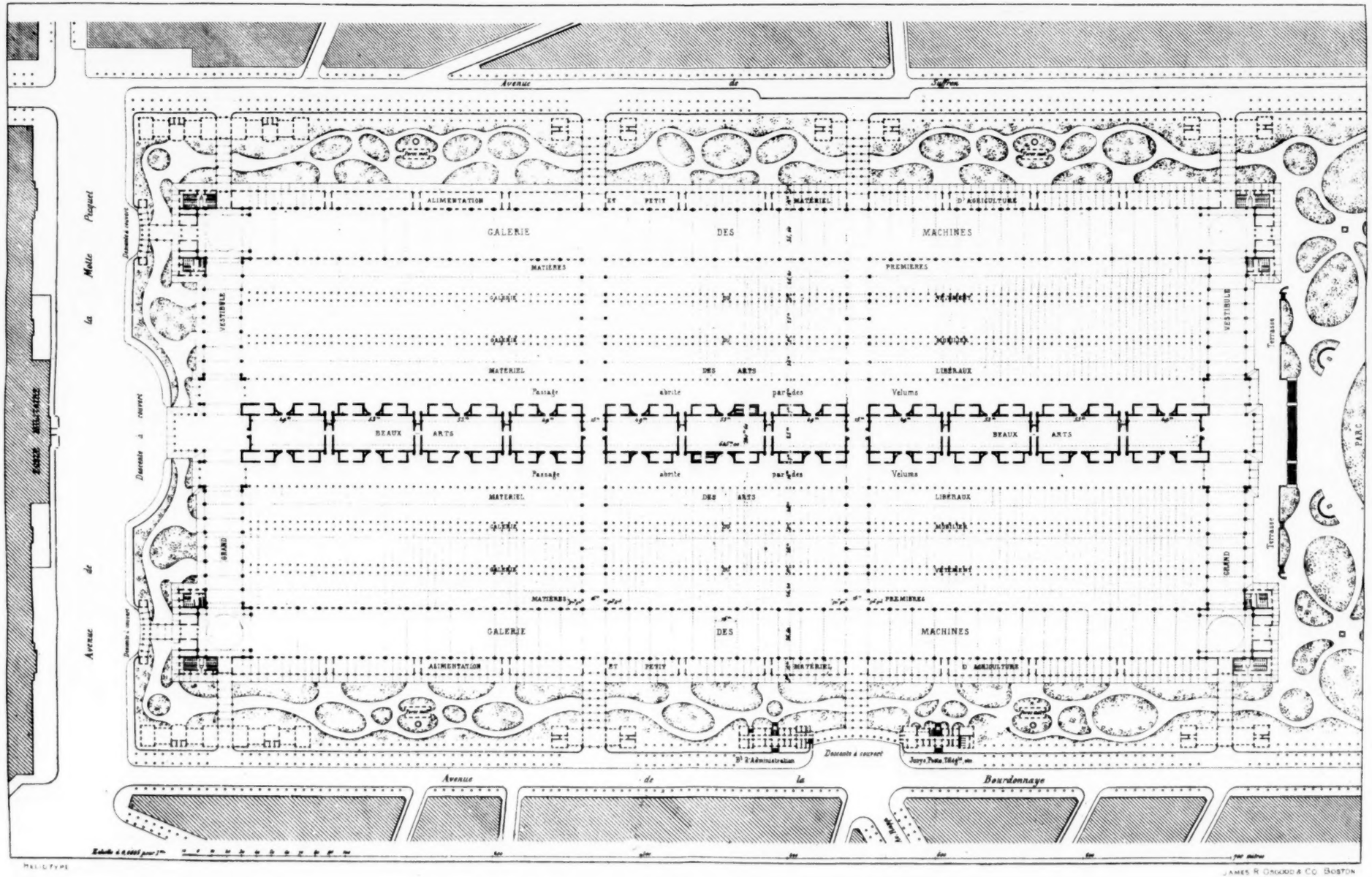


Fig. 1 Coupe transversale à 0.0013 pour 1 mètre. (Ensemble)
Fig. 2. Coupe transversale de la partie mediane à 0.005 p. 1m.
Beaux-Arts
Fig. 3. Coupe transversale d'une partie extrême à 0,005 p. 1m.
Galerie des Machines
35.00
Echelle de 0,005 pour 1 mètre

BUILDINGS FOR THE EXPOSITION OF 1878

SECTION OF M. HARDY'S DESIGN.



BUILDINGS FOR THE EXPOSITION OF 1878.

PLAN OF M. HARDYS, DESIGN.

MAILLEFERT

JAMES R. OSGOOD & CO. BOSTON

it would be a useful contribution to any museum of art that could afford room for it.

Sweden exhibits specimens of what constitute the most extensive industries of that country, — the manufacture of dressed lumber. These, though of no art value, are especially interesting to the architectural profession. It certainly is a novelty to see planing-mill and machine-work brought over here for exhibition, and it is a reminder that there are other wood-building nations than our own. How far the exhibition of such work can be of benefit to the makers, is hard to see. England has for a long time been the market for Norway dressed lumber; but there is very little prospect that the trade will extend as far as the United States. The tendency is rather the other way; and it has only transpired within a few weeks that English contractors were negotiating in Chicago for doors, sashes, etc., to be used in the cheaper class of London houses. The Swedish exhibitors are James Dickson & Co., and H. H. v. Essen. The workmanship and finish of these specimens is of the very best kind, the designs are well adapted to the material, and the wood is without external finish.

Denmark exhibits a set of parlor or cabinet furniture of ebonized wood, by C. B. Hausen of Copenhagen, in the later Renaissance style. This displays the excellent workmanship to be seen on every thing in the Danish court. The design is temperate and refined.

THE ILLUSTRATIONS.

THE BUILDINGS FOR THE EXPOSITION OF 1878.

WE give this week the plan and a transverse section of the buildings as they are to be built by M. Hardy, for which we are indebted to the *Revue Industrielle*. We also copy from the *Encyclopédie d'Architecture* the façades of the buildings to crown the Trocadéro, as shown in the first designs of MM. Davioud and Bourdais, and of M. Crépinet, whose designs were among the six that received first prizes; also a perspective view of M. Simil's design, — one which received a second prize, — as it shows, better than any other drawing we have seen, the relation that the Champ de Mars and the Trocadéro hold to each other.

THE SANITARY CONDITION OF COUNTRY HOUSES.

II.

THE precise methods of causation and of propagation of cholera, diarrhœa, dysentery, typhoid fever, diphtheria, cerebro-spinal meningitis, neuralgia, and the minor range of malarial fevers, it is the province of the physiological investigator to determine. These questions are involved, if not in mystery, at least in a certain amount of uncertainty; and doctors disagree radically as to the "germ" theory, and as to the manner in which epidemics are introduced into new localities. Fortunately we need not, in this connection, consider these moot questions; for doctors by no means disagree as to the influence of neglected filth in either initiating or propagating all diseases of the class referred to. It is a matter of small consequence to the average householder, who cares nothing for the general sanitary bearings of the question, whether typhoid fever is propagated by germs, or by some agent as yet unknown. He does care very much, or at least he would care very much if he thought any thing about it, that the condition of his house shall be in every respect such as to insure, beyond question, the perfect safety of his family. He does not, it is true, realize the fact, which we fully appreciate, that his costly and finely finished water-works are a source of danger. He has trusted to his skilful architect to make sure that he is guarded against unhealthful influences from this source, as effectively as he is guarded against exposure to the weather. He has no time to devote to this part of his work; but he feels he has given it into hands fully competent to direct it, and he takes no further thought or trouble about it. Unfortunately, so far as the question of health is concerned, he has, as a rule, trusted the work to an artist, rather than to a sanitarian; for the architect, however competent to plan the general arrangement of the house, and to make it, without and within, beautiful, attractive, comfortable, and convenient, is, like the average owner, too often either ignorant of or indifferent to the requirements of the sanitary laws, as recently developed.

The owner takes possession of his new home, and subjects his family to unseen and unsuspected influences, which are quite likely, sooner or later, to manifest themselves in one form or other of ill-health. He then calls to his assistance a physician, who, if we take an average representative of the profession, has sat at the feet of an old Gamaliel, and has applied himself far more to the art of healing than to the art of prevention. In the slight ailment or in the grave sickness with which he has to deal, he is skilful, useful, and efficient; but surely physicians themselves will confess that, as a class, they too seldom seek for the cause of ill-health in conditions which are so universal among their patients, and which obtain to such a degree in their own homes, that they are apt to be disregarded. He naturally looks to some unusual condition, or to some unusual exposure.

Indeed, it is hard to realize that conditions under which the human machine so generally works perfectly and easily may, under certain circumstances, become the very conditions for the causation of diseases. If we can get doctors and builders to *realize* the absolute, vital importance of controlling the conditions under which we live, we shall have done our best work. Mr. Brown and Mr. Jones and Mr. Robinson — practical men, engrossed in the management of their affairs, and with a long-cherished antipathy to theory and innovation — will pay very little attention to what we may say in this hall, or to any thing we may write; but they will listen to the advice of their physicians, and in building they will follow the least sanitary suggestion of their architects. Constant dropping will wear away even the stone of their indifference; and we shall in time secure a reformation of the whole community. But our earliest effect is surely to be produced by our influence over their professional advisers, who will, I trust, not misapprehend the spirit in which we venture to remind them of this vital and too little heeded element of their duties.

Let us come now to the specification of our charge against the modern country-house. It stands, we will suppose, upon nearly level land of a nearly impervious character; but ample provision has been made for the drainage of its cellar. Not far away from it are cisterns and a well, each of which is in communication with the force-pump in the kitchen. This is provided with a twin cock by which water may be drawn from one or from the other at pleasure. Under the roof is a large tank holding more than a day's supply; and this, filled by the force-pump, furnishes all of the water needed for constant tap at every point. Near the middle of the house, one above the other on the different floors, are placed the bath-rooms with water-closets and stationary basins, — in the middle of the house to be safe from the frost of more exposed positions. The attempted ventilation of these rooms is often only by a window into a closed well, or through a small register in the wall, opening into a small rough flue in the chimney, throttled from bottom to top with projecting bricks and lumps of mortar. The real ventilation is through the constantly open doorway into the interior passages of the house. In each bedroom, or in a closet attached to each bedroom, there is a stationary wash-basin with its supply of hot and cold water. Under the staircase in the main hall, and often with no ventilation at all, are the conveniences of the master of the house himself. The butler's pantry has a sink connected with the main outlet-drain by a generous pipe. The kitchen sink has the same connection, and so have the laundry-trays, which, together with the servants' closet, are often near the level of the cellar-bottom, — near the zero point of the drainage system. The house has been built by contract; and a plumber, whose specification has related chiefly to the weight of pipe that he shall use, and to the character of finish of the basins and bowls, and their faucets and plugs, has been left to the exercise of his own discretion as to the arrangement of all the hidden parts of the work. His job is a satisfactory one if the tubs and trays and sinks and basins have the proper neat look, and if an abundance of water is everywhere supplied, and everywhere flows readily away. For an outlet he has been provided with two cesspools; the first one, tightly cemented, has a trapped overflow; the second, receiving the overflow of the first, is built with uncemented walls, with a view to the percolation of its contents into the soil. For a time every thing works well; the clean new outlet-pipes perform their office satisfactorily, and the clean soil about the leaching cesspool performs its purifying work completely. The house is acceptable in every way; and its happy owner congratulates himself that he has secured all that modern art and knowledge can give him.

Let us examine this house after it has been a few years in occupation, with a view to studying its actual sanitary condition. We will disregard, as foreign to our immediate subject, the flood of injurious carbonic oxide which its registers pour into its interior, and the sad lack of ventilation which the substitution of the furnace for the open fire has inflicted. We will say nothing of the pressure of soil-water against the absorbent cellar-wall, nor of

the damp emanations from the undrained, heavy ground around the house. Let us confine ourselves only and strictly to the questions of water-supply and drainage.

The well, although perhaps not very near the leaching cesspool, and the now foul soil surrounding it, may get its water through some stratum of gravel which carries the ooze of this cesspool; or it may penetrate a permeable stratum, or a seam in the underlying rock, which brings it into communication with other cesspools or privy-vaults far or near. These impurities are not perhaps enough to produce an obvious effect, while the water in the well is high, and holds back the water in the soil as the land-water in the beach holds back the salt tide; but, when the supply fails in time of drought, then the demand on the well is replaced by a flowing-in from the foul earth, and the impurities are concentrated to a dangerous degree. Or perhaps the dejections of a patient ill with typhoid fever or other disorders of the bowels have entered the stream oozing from the cesspool to the well. In either case disease follows.

Warned by the frequent reports of diseases originating in this way, the master of the house has given strict and frequent orders that under no circumstances shall water from the well be used except for cooking; but some of the inmates, the servants especially, preferring the sparkling water of the well to that of the cistern, bring the pump into communication with the former; and now and then the whole supply of the house, for a longer or shorter time, is taken from this source. Indeed, if there is a well in communication with the house-supply, it is simply impossible to prevent the use of its water from time to time.

THE THEORY OF COLOR.[1]

MOST of our readers are probably aware that a new theory of color, first propounded in the early part of this century by Dr. Thomas Young, and more recently adopted by Von Helmholtz, has of late years found a place in scientific text-books. It is the object of Dr. von Bezold's little treatise to show, that while this theory goes counter to the universal opinion, and indeed to the experience of mankind, and is so subversive of all previous ideas on the subject that it is hard to receive, and is so paradoxical that it is almost impossible to keep clear in the mind, it is nevertheless thoroughly established, and is easily illustrated and demonstrated. He then goes on to show that this theory and the facts on which it is based remove almost all the difficulties that have hitherto beset the subject, and offer suggestions of the greatest practical value in the arts.

It is easy to show that the ordinary ideas regarding colors and their combination rest upon a misconception, and a misconception which Dr. Young exposed by one of those simple and obvious observations that only a man of genius can make. It is plain, for instance, when one comes to think of it, that when light is colored by passing through red glass, we must not say that red has been added to the beam, but that all the rest of the colors have been taken away. The red rays were there before, but neutralized to the eye by the rest of the spectrum. So with blue or yellow glass. They are sieves that let only the blue or the yellow rays come through. The apparent coloring of the light is not a process of addition: it is a subtraction.

This is simple and clear enough. The consequences are not quite so obvious. If now we make the light pass through first the yellow glass, and then through the blue, what happens? We strain it twice: it is twice deprived of some of the elements that made it white. A double subtraction has been performed; not, as might at first seem, a double addition. If one glass had added blue to the white ray, and the other added yellow, this double addition would have been a mixing process, and the result would have been a compound of the two ingredients. But as in fact we perform a double subtraction, the process is one of elimination and purification; and, as the blue and yellow are each simpler than the white ray, so the green light that struggles through them both must be simpler than the blue or the yellow. We come then at once to the surprising discovery that green is not a secondary color compounded of yellow and blue, but a primary color common to them both, and that blue and yellow are both compound or secondary colors. Further analysis shows that the other ingredient of blue is a sort of violet, and that of yellow, red; and these results are confirmed by a number of simple experiments with colored rays or with the color-top, in which by an inverse process red light and green light are united to produce a perfect yellow, and from the combination of green and violet is obtained the purest of blue.

That a thing so contrary to experience should be so easy of proof, comes from the fact that our experience with colors and their combination is almost exclusively formed from the use of pigments; and that pigments, especially the more transparent ones, act just as glass does. With them, as with the colored glasses, what seems an addition is really a subtraction, and the mixing of the paints is really a separating of the hues. The character of the act is exactly the contrary to what it seems; and as, practically, it is pigments, not colored lights, that we mostly have to do with, it is, as we have said, almost impossible at first to keep a clear head on the subject. The old English paradox of the rule of the road[1] was nothing to the difficulty of bearing it constantly in mind that adding is subtracting, that compounds are simple, and that each of the parts is greater than the whole.

If any thing could make this puzzle clear, it would be Dr. von Bezold's simple, luminous, and elegant exposition, and the arguments and illustrations by which it is enforced. In three brief chapters he discusses the theory of light, of color, and of the mixture of colors, in a manner that leaves nothing to be desired. They are full of curious observation, convincing demonstration, and ingenious remark. The fourth chapter, on the theory of contrast, and the fifth, on the use of color in the arts, are fuller of practical suggestion, but not less brilliant and entertaining. Particularly good are the passages in which the analogy of sound and color is discussed, and the practical maxims on the management of contrasts which are deduced from the principles laid down. They suggest a hundred curious investigations. The translation is an excellent one, Mr. Koehler's foreign birth betraying itself occasionally in an unusual turn of phrase, never, so far as we remember, in awkward thinking. We are disposed to quarrel with him for choosing the word *purple*, having apparently royal purple in mind, to express the colors between red and violet, the only hues, by the way, that are not found in the spectrum. "Purple" is just the most ambiguous word in his vocabulary, while *crimson*, which he rejects, is just the word he wants. But such errors are few, if, indeed, this is not the only one.

Mr. Prang's illustrations are very good, and suffice to make clear the meaning of the text. But experiments of one's own trying are the only things that on such a subject can give any real satisfaction. As the only colors most people have at hand are those in a paint-box, which are just the wrong things, it is a pity that each volume has not a color-top to go with it, so that every reader may satisfy himself that these things are so.

[1] The Theory of Color in its Relation to Art and Art Industry. By Dr. W. von Bezold, Professor of Physics at the Royal Polytechnic School of Munich, and Member of the Royal Bavarian Academy of Sciences. Translated by S. R. Koehler. Authorized American edition revised, and enlarged by the author. Published by L. Prang & Co., Boston.

THE AMERICAN INSTITUTE OF ARCHITECTS.

THE RHODE ISLAND CHAPTER.

THE Annual Meeting of this body was held Oct. 4, the President, Mr. A. C. Morse, in the chair.

The Executive Committee reported the affairs of the Chapter to be in a satisfactory condition in every respect. During the year sixteen meetings have been held, four papers read on subjects of professional interest, and action taken on several matters of importance, including the preliminary steps for the formation of a building-law for the city of Providence.

During the year four professional and two junior members have been admitted to the Chapter, one professional member has died, and one junior has removed from the city. The Chapter at present numbers nine professional and one junior members.

On recommendation of the Committee on Admissions, Mr. James Murphy of Providence was unanimously elected a member of the Chapter.

The officers of the Chapter for the ensuing year are: President, A. C. Morse; Vice-President, Alfred Stone; Treasurer, George C. Mason, jun., of Newport; Secretary, Charles P. Hartshorn; Executive Committee, the President and Secretary, and Messrs. Cady, Nickerson, and Mason; Committee on Admissions, the President and Secretary, and Messrs. Stone, Carpenter, and Mason.

The report of the Treasurer, showing a balance remaining in his hands, was accepted.

The following memorial of the member lately deceased was entered on the records: —

[1] The rule of the road is a paradox quite
As you're journeying gayly along:
If you go to the left you are sure to go right,
And if you go right you go wrong.

Edwin L. Howland, late professional member of this Chapter, was born in Pawtucket, June 5, 1838. His parents were Edwin and Susan C. (Langley) Howland; his wife, Electa A. Baker of Rehoboth, Mass., whom he married March 11, 1860, and who died July 7, 1873, leaving no children. Mr. Howland died June 28 of the current year. Mr. Howland began his professional life in the office of the late Major Warren of Providence, about twenty years ago. He continued his studies under the direction of Messrs. William T. Hallet and Calvert Vane of New York; and, in 1864, returned to Providence, where, after practising for a few years, he became associated with Mr. James Murphy, and remained with him until June, 1871, when he opened an office in the Atlantic Building, in which he continued until his death. Mr. Howland was a man of sterling integrity, of untiring devotion to his profession, and honorable in the practice thereof. Of much original genius, his later works show a remarkable increase in power of design and refinement of taste; and some of them deserve to rank with the best of the present generation. Among the more prominent of these works may be mentioned the Federal-street Schoolhouse, the churches of the First and Second Universalist societies, the Pilgrim or Harrison-street Church, the Wilcox Buildings on Weybosset and Custom-House Streets, the Durfee Building on Dyer Street, etc. After a severe contest with adverse circumstances, Mr. Howland was rapidly attaining a large and lucrative practice when the painful malady which caused his death compelled him to withdraw from active life. He was present at the preliminary meeting for the formation of this Chapter, and became a member thereof, Jan. 5, 1876. Fully appreciating its possible value, he was just beginning to work heartily for its advancement when he was forced to bid us farewell. In him the Chapter loses an earnest and efficient member, the profession an honorable and upright practitioner, the community an honest and faithful citizen. Let us so build that when we too pass on, each one of us may leave as clean a record behind.

The annual report of the Secretary was read, and adopted as the report of the Chapter to the Convention of the Institute, called to meet in Philadelphia, Oct. 11.

THE BALTIMORE CHAPTER.

At a meeting of the Baltimore Chapter, held at their rooms on the evening of Oct. 24, the following officers were elected for the ensuing year: President, Mr. E. G. Lind; Vice-Presidents, Messrs. F. H. Smith and J. Murdoch; Secretary, Mr. E. F. Baldwin; Treasurer, Mr. J. Noel Wyatt; Executive Committee, Messrs. R. L. Poor and C. E. Cassell.

BUILDING IN HARTFORD.

HARTFORD, CONN.

TO THE EDITOR OF THE AMERICAN ARCHITECT AND BUILDING NEWS.

Dear Sir, — In your article on Hartford, of Oct. 21, there are a few inaccuracies which will bear correction.

In describing the new Trinity College Buildings, your correspondent, evidently laboring under a severe disappointment regarding the diminutive appearance of what is being done compared with the enormous range of buildings illustrated at different times, which has undoubtedly created a false impression as to the extent the college may go at present in building-operations, states that "the only portions now going forward are two buildings, perhaps a hundred feet by forty each, and two moderate stories high," etc. The truth of the matter is this: There are two buildings going forward, and now well advanced towards completion, each two hundred and eighty-six feet in length, with a space reserved for a gateway, the foundations of which are now being laid, of seventy-two feet in width, making altogether a line of six hundred and forty-four feet. Again, the major part of the buildings are three finished stories, with a central portion to each of four stories in height. This much for the dimensions of the buildings.

As far as it may be instructive to the student of architecture to visit "the only piece of Mr. Burges's work in this country," I will say, briefly, that it will repay him the time and trouble; not, however, until the buildings are finished, and "the one carved ornament" has received the last touch of the sculptor. It is quite probable that other ornamentation will be visible at that time. He would see also an honest treatment of a mullion window, with its casement, so rare in this country, which if used at all would occur perhaps once in a gentleman's house, say, in a hall, or once in a library, as a curiosity. Here every window is alike in treatment, and its simplicity alone should insure its universal adoption in this country.

I will not attempt to disabuse your correspondent's opinion as to the desirability of going abroad for an architect to show us these things. I will leave this to the honest consideration of those who have visited colleges elsewhere, and who are able to make a proper comparison.

I would advise all who visit the new buildings to call first at the office on the grounds, in the immediate vicinity of the works, where the drawings may be seen and proper information given.

Permit me to add, in closing, that Mr. Richardson's works in Hartford comprise the very elegant Cheney Building, and the less pretentious though fully as pleasing office of the Phœnix Fire Insurance Company, and not Mr. Goodwin's residence. Great injustice has been done by your correspondent in not mentioning the two lions flanking the main entrance to the Phœnix Bank Building. It was apparent that his mind was not quite made up as to the *real* lions of Hartford, and I refer him kindly to these two.

Very respectfully,

T. H. KIMBALL.

THE LATEST PERIODICALS.

THE leading article in the last number of the *Architect* speaks of the habit, which may almost be called outrageous, of persons practising some one branch of the building-trades, adding to their business cards the assertion that they are prepared to undertake all kinds of building and repairs, to furnish plans, specifications, and estimates at the shortest notice. "Odds and Ends about Construction" is a practical paper containing some valuable notes on masonry. The matter of archæological accuracy on the stage seems to be exciting a good deal of attention in England at present. Mr. Burges commences in this number a criticism on the three historical plays now on the London boards. An interesting letter concerning the baptistery at Ravenna, by a correspondent of the London *Times*, is reproduced. "A Cape Town Muddle" gives an account of a piece of professional sharp practice that verges close on dishonesty. In the *Building News* there is little to interest the American reader. Mr. Batty Langley's reputation as an architectural writer is defended against the aspersions contained in a late number of the *Architect*. The second volume of Mr. Talbert's work on ancient and modern furniture is favorably reviewed; and, as an example of Mr. Talbert's skill and taste, a double-page illustration of a Jacobean staircase, the original drawing of which was exhibited at the Royal Academy last summer, is given. Besides these articles, "The Cathedral Church and Close of Chichester," and the "Science Class," which has just resumed its studies, are all that is of note in the number. As sometimes happens, the articles in the *Builder* are adapted to the wants of any cultivated reader quite as much as to those of an architect. Such articles are, "Old Streets in Paris;" "Liverpool Congress of the Social Science Association," together with two papers read thereat, — one on street architecture, the other on the work accomplished by the London Art Union; and "Costumes at the Crystal Palace." Mr. W. Cave Thomas contributes an article, "As to the Influence upon Society of Decorative Art and Art Workmanship," the gist of whose teachings is that it is not art that cultivates the people, but the existence of cultivated people that makes art a possibility. An interesting article on "Modern English Architecture" is reprinted from the *Fortnightly Review*. *La Semaine des Constructeurs* gives the commencement of what promises to be an interesting article on the movement of air in ventilated halls.

NOTES AND CLIPPINGS.

CATHOLIC CATHEDRAL AT HARTFORD. — The new Catholic Cathedral in Hartford, about to be erected, will be, it is said, the largest church-edifice in New England. The building will be of Connecticut brown stone elaborately carved and ornamented. The architecture is the Norman Gothic; and the vast structure will have a great rose window over the main entrance; a statue of St. Joseph will surmount the gable; and the two lofty towers, with their spires, will be crowned by ornamental finials. The twin spires will be two hundred and fifty feet high; the depth of the church will be two hundred and fifty-four feet, the width of the transepts a hundred and sixty-six feet, and the width of the nave ninety-six. It will possibly be ready for occupancy next October.

THE BOSTON SOLDIERS' MONUMENT. — The plaster casts of the four figures which are to ornament the base of the Soldiers' Monument, Boston, have been received: and they will soon be placed in the hands of the men who are to cut the granite figures. Four other figures, in bronze, are already completed; and the figure of America, which is to crown the whole mass, is to be finished about Christmas time.

THE MICHIGAN CAPITOL. — The walls of the new Capitol at Lansing are now entirely completed, except those of the dome. The bas-relief on the main pediment of the building has the appearance of a group of statuary, the figures are so prominent from the face of the wall. The roof is nearly completed over the north and south wings; and good progress has been made in the heating contract. The stone for the porticos is mostly cut. Large flagstones, some weighing ten to fifteen tons, are now being cut for the entrance. The Building Commissioners are so well pleased with the construction of the edifice, that they will give the present contractors a contract for a stone fence around the grounds, which occupy a space of ten acres. Quite a quantity of marble tile for the floors has been rejected, and will not be used. The roof is composed of corrugated sheet-iron, covered by five inches of concrete and sheeting, with a tin covering, and supported by iron trusses. There is an iron cistern in each wing with a capacity of forty-five barrels, and one in the centre building which will hold a hundred and fifty barrels. The ventilators, it is estimated, will change the air in the whole edifice once in twenty minutes. The heavy iron ribs for the dome are being placed in position, and the mason-work will continue as long as the weather is favorable.

THE BROOKLYN CITY HALL. — The lowest of the forty-five bids received for work upon the new City Hall, Brooklyn, are: For marble-work, $28,200, by J. M. Masterson; for masonry, $64,798.74, by George Hadden; for carpentry, $38,000 by J. Fallon, and $36,730 by E. Snedeker; for plumbing, $5,432 by M. Kessel, and $49,443 by S. Hurley; for ironwork, $47,381 by D. D. Boyce.

A BUILDER'S BLUNDER. — On Oct. 28, a new brick building owned by Blodgett and Clarke, in process of erection in Manchester, N.H., fell with a tremendous crash. Fortunately only four persons were slightly bruised. The accident was caused by the placing of thirty or forty heavy granite window-sills on the main beam of the second floor. The great weight being more than the beam could support, it gave way, taking a great part of the new brick walls, completely shivering the timbers of the first floor, and filling the cellar with a mass of *débris*.

THE ARMORY BUILDING. — The Armory Building, Washington, D.C., is now undergoing a thorough renovation, preparatory to becoming the repository for the rare and curious things which were furnished by the Smithsonian Institution and the Agricultural Department to the Centennial Exhibition in Philadelphia, and which will soon be returned to that city.

NEW CATHOLIC CHURCH. — The corner-stone of a new Roman Catholic Church was laid in Philadelphia on the 22d ult. The church will be of the Gothic style, 154 feet 6 inches by 62 feet 6 inches, and will be constructed of brown stone, with two spires in front, 128 feet in height to the top. The seating-capacity of the church will be 1300; the entire cost will be about $100,000; and it is expected that the structure will be completed in December, 1877.

HEBREW ORPHAN ASYLUM. — The Hebrew Orphan Asylum, a new edifice on Calverton Heights, about two miles from the north-western section of the city of Baltimore, was dedicated Oct. 22.

THE NEW YORK COURT-HOUSE EXTENSION. — The contract for completing the new Court-House, on which work has at last commenced, requires a material departure from the original design. The unfinished porch on the north side is to be completed; but instead of the portico on the south side, as originally contemplated, a large wing seventy-eight by fifty feet in superficial area, and four stories in height, is to be built. Instead of the dome in the original plan, the Court-House is to have an octagonal lantern thirty feet high, and sixty feet in diameter. The extension is to be completed in two years, at an estimated cost of four hundred and seventy-five thousand dollars.

BURSTING OF A RESERVOIR. — The large reservoir of a water-company at Towlaw, near Durham, England, burst last month without causing one of the terrible disasters that usually accompany such a mishap. The reservoir was constructed of malleable iron and cast-iron plates, was cylindrical in shape, and held about a million gallons. The bottom was of puddled clay, resting upon very insecure foundations, as the coal, which is only a few feet below the surface, has recently been worked out. The engineers who went to examine it, on hearing of a leakage, found water gushing up between the plates and the outer embankment to the delight of a number of children. Soon the irresistible force of the water forced a large breach in the iron plates, and the reservoir quickly emptied itself. Fortunately the embankments of a railroad-cutting into which it flowed kept the flood from doing much damage before it found a resting-place in an empty pond.

THE BYRON MEMORIAL. — A competition for the execution of the Byron statue will be held this month at the South Kensington Museum. Several models have already been presented. Upwards of one hundred sculptors, including some of the best-known English sculptors, have intimated their intention of competing.

WALL-PAPERS AND TYPHOID FEVER. — An Englishman, several members of whose family had been sick with typhoid fever, had a room repapered, and found that there were no less than twenty-five wall-papers already on the wall. The presence of this mass of decomposing paste and paper sufficiently accounted for the disagreeable smell that was always noticeable although drains and water-closets were well trapped.

A MEDIÆVAL BUILDING. — A French writer defines a mediæval building as one that is always under repair.

NO HOARDINGS NEEDED. — That travel need not be obstructed during the demolition of an unsafe building in Poultry, England, the work was done between dusk and midnight by the aid of lime lights.

A PARISIAN AQUARIUM. — One of the most attractive features of the Exposition of 1878 will be a large aquarium capable of containing four hundred thousand gallons of water, affording tank-room for four million pounds of fish. The estimated cost is about two hundred thousand dollars.

CHANGE IN THE PLAN OF THE EXPOSITION BUILDINGS. — The plan for the buildings for the Exposition of 1878 has been modified so far as to diminish the space assigned for the exhibition of fine arts by omitting three of the eleven buildings of the original plan (shown in our illustration). The space thus left vacant is to be laid out as an ornamental garden. Even with this change, the space allotted for the display of the fine arts will contain three thousand square mètres more than the space assigned to it in 1867. Moreover, the width of the galleries in 1867 was only fifteen mètres, while these are to be twenty-five mètres in width, which may allow of the introduction of screens, so as to increase the hanging space.

THE FLOODING OF A THEATRE. — A short time since the Imperial Theatre of St. Petersburg was very near falling a prey, not to the flames, but to the opposite element. Some one forgot to turn off a tap in a wardrobe. The water kept flowing steadily all night through the unclosed orifice. It found its way to the boxes, and thence to the stage, causing a regular inundation; so that, the next morning, the scared officials almost imagined the Neva had selected a new channel.

SGRAFFITO. — A *sgraffito* frieze about two hundred and twenty-five yards in length, representing, in procession, all the princes who have ruled over Saxony, now decorates the royal stables at Dresden. The work was done by Herr Walther. So august a procession strikes us as being rather out of place on a building where a procession of the sires and dams of the royal stud would be more in keeping, as well as probably more decorative.

WILHELM AND ALEXANDER VON HUMBOLDT. — Statues to the brothers Wilhelm and Alexander von Humboldt are to be erected in front of the Berlin University grounds. Nearly one hundred thousand marks have been subscribed for the statue of Alexander, and the Emperor of Germany has promised to try and obtain from the national purse the amount needed for the statue of Wilhelm.

MURAL PAINTINGS IN THE BERLIN MUSEUM. — The paintings in the new Museum at Berlin by Wilhelm Kaulbach are not true frescos, but are executed in the water-glass process, which was used by Maclise and Herbert in the corridors of Westminster Palace.

CARPENTRY. — "*What precaution should be taken at the bearing ends of timber?* Timbers at their bearing ends should rest upon piers or solid portions of walls where possible, and not over openings, as windows, etc., unless these openings are bridged by a girder. Beams at their bearings should be so placed that their weight may be spread over as great a breadth of wall as possible by means of a stone template of large dimensions. Where such beams act as ties to the walls, they should be secured to these templates by iron calking-plates let into grooves in the stone, and into the beam ends. The weight of any walling above should be carried by a cover-stone resting on the masonry at the sides of the beam, or by a small discharging arch if the timber is of large size. Iron shoe-plates are perhaps the best protection for beam ends, keeping back the moisture arising from the masonry or walling in which they are built. A clear air-space should be left all round the ends, except the actual bearing: this will do much to prevent decay. Where joists cross a partition-wall which is to support another wall above, the space between them should be bricked up dry against their sides, and just above their level, so that the weight is carried by the brickwork alone, without pressing on the joists. Bond-plates should be avoided, as, in most cases, they are a source of weakness to the wall, and generally decay before the wall or the joists; broad and stout iron bond laid on the course below the joists is much more durable and secure. No timbers should be placed beneath or in near proximity to a fire-hearth or to a smoke-flue. Nine inches of solid brickwork should always intervene." — *Architectural Science Class in the Building News.*

THE AUTOMATIC FIRE-SIGNAL. — Mr. W. B. Watkins's system of automatic signal telegraph for protection against fire is operated by the expansion of metals by the action of heat; and the result is accomplished by thermostats, or heat-detectors, which consist of small brass tubes or cases enclosing an insulated compound strip of two metals of unequal expansive power, which, when acted upon by heat, will automatically close the circuit, and send the signal. Thermostats are placed twenty feet apart on the ceiling of each room of an unlimited number of buildings, all of which are connected with the signal-boxes and main line, and with the earth. These detectors are set at about the average temperature of the building, say, 120° or 130°; and a slight increase of warmth gives the alarm, registering at the patrol station not only the number of the building, but the floor on which the fire occurs. It is in quite extensive use in New York, and is regarded with such favor there that the underwriters have agreed to allow a reduction of five per cent from the rates on buildings protected by this system, and ten per cent on specially hazardous risks.

THE WASHINGTON MONUMENT. — The contributions for the Washington Monument, which had been accumulating for several weeks in a donation-box at one of the State buildings at the Exhibition, amounted to thirteen cents and a toothpick.